In the Claims:

1. (currently amended) A production method of a titanium-made plate-type heat exchanger comprising flow paths of a first fluid and flow paths of a second fluid alternately arranged such that heat can be exchanged between the two fluids, said production method for forming said flow paths by connecting a titanium-made flat container having an inlet of one of the fluids formed on one end and an outlet of the fluid formed on the other end to an offset-type titanium plate fin accommodated in said flat container and connected to the inner side of said container via top ends of concave strips of said titanium plate fin so as to form a plane to plane connection, comprising steps of:

coating a brazing paste over positions to be connected of said constituting members by using a paste supply machine, wherein said brazing paste is prepared by atomizing an alloy comprising a Ti-Zr type brazing solder, which melts under 880°C, containing 20 to 40 wt.% of titanium, ~~and~~ 20 to 40 wt.% of zirconium, 15 to 25 wt% of copper and 0 to 10 wt% of nickel so as to obtain a powdered alloy, which is mixed with a neutral binder so that said paste is prepared; and

heating said brazing solder coated constituting members under 880°C in an vacuum and/or inert gas atmosphere.

2. (cancelled).

3. (new) A method of production of titanium-plate heat exchangers comprising forming a titanium flat container with titanium-plates, arranging flow paths of a first fluid and flow

paths of a second fluid alternately, exchanging heat between the first and the second fluids, forming the flow paths by connecting the titanium flat container to an inlet on one end and an outlet on another end for flowing the fluids, providing an offset-type titanium plate fin with concave strips having top ends, connecting the offset-type titanium plate fin to an inner side of the titanium flat container via the top ends of the concave strips and forming titanium members having portions with plane to plane connections, preparing a brazing paste by atomizing a braze alloy comprising a Ti-Zr type brazing solder and mixing the braze alloy with a neutral binder, coating the brazing paste over the portions of the titanium members to be connected, heating the brazing paste coated titanium members at brazing temperatures under 880°C thereby producing the titanium-plate heat exchanger.

4. (new) The method of claim 3, wherein the braze alloy melts under 880°C.

5. (new) The method of claim 4, wherein the braze alloy comprises 20 to 40 wt.% of titanium and 20 to 40 wt.% of zirconium.

6. (new) The method of claim 5, wherein the braze alloy further comprises copper and nickel.

7. (new) The method of claim 6, wherein the braze alloy comprises 15 to 25 wt% of copper and 0 to 10 wt% of nickel.

8. (new) The method of claim 3, wherein the heating under 880°C comprises heating in a vacuum or an inert gas atmosphere.

9. (new) The method of claim 3, wherein the heating under

880°C comprises heating in a vacuum.

10. (new) The method of claim 10, wherein the heating under 880°C comprises heating in an inert gas atmosphere.

11. (new) A titanium-plate heat exchanger produced by the method of claim 3.